

What is claimed is:

1. A crankshaft supporter comprising:

a support member which is attached to a cylinder block of an engine to support a crankshaft and which is formed of a matrix of aluminum alloy with a preform cast inside;

said support member having a mounting surface in contact with an attachment surface on said cylinder block, a bolt hole corresponded to a bolt hole in said cylinder block and opened to said mounting surface, and a dowel hole in coaxial alignment with said bolt hole and opened to said mounting surface;

said preform having a penetrated section in which a through hole defining said bolt hole is formed; and

said support member having a recess section which is formed of said matrix so as to shape said dowel hole, said recess section being positioned between said mounting surface and an opposing surface of said penetrated section that faces said mounting surface with said dowel hole being formed entirely within said recess section.

2. The crankshaft supporter as defined in Claim 1, wherein:

said support member has a plurality of bolt holes therein; and

said dowel hole is defined to open to said mounting surface of said support member in coaxial alignment with at least one said bolt hole.

3. The crankshaft supporter as defined in Claim 1, wherein said preform has said opposing surface displaced in a depth direction of said dowel hole so that said recess section formed of said matrix is defined between

said mounting surface of said support member, where said dowel hole is formed, and said opposing surface of said penetrated section that faces said mounting surface of said support member.

4. The crankshaft supporter as defined in Claim 1, wherein:

said preform includes a center section which defines an arcuate bearing cavity therein, and a pair of said penetrated sections disposed on opposite sides of said center section and each having a said through hole defining said bolt hole formed therein;

said recess section and the dowel hole associated therewith being associated with only one of said penetrated sections, the opposing surface of said one penetrated section being spaced downwardly a substantial distance from the mounting surface of the support member so that the depth of the dowel hole formed in the recess section is defined between said mounting surface and the opposing surface of said one penetrated section; and

the other said penetrated section having an opposing surface thereon that faces the mounting surface of the support member and is spaced downwardly therefrom by a smaller distance so that the opposing surface on said other penetrated section is at an elevation above the opposing surface on said one penetrated section.

5. The crankshaft supporter as defined in Claim 1, wherein:

said preform includes a center section which defines an arcuate bearing cavity therein, and a pair of said penetrated sections disposed on opposite sides of said center section and each having a said through hole defining said bolt hole formed therein;

each of said penetrated sections having a said opposing surface thereon which is spaced downwardly a small distance from the mounting surface of the support member, the opposing surfaces on said pair of penetrated sections being at the same height;

said dowel hole being associated solely with one of said penetrated sections, said one penetrated section having an enlarged opening which surrounds the through hole and penetrates coaxially downwardly therealong through a selected distance away from said opposing surface; and

the matrix defining said recess section penetrating downwardly and filling said enlarged opening to permit forming of said dowel hole which penetrates downwardly from said mounting surface into the matrix defined in said enlarged opening.

6. A crankshaft supporter comprising:

a support member which is attached to a cylinder block of an engine to support a crankshaft and which is formed of a matrix of aluminum alloy with a preform cast inside;

said support member having a mounting surface in contact with an attachment surface on said cylinder block, a bolt hole corresponding to a bolt hole in said cylinder block and opened to said mounting surface, and a sleeve-like dowel member in coaxial alignment with said bolt hole and protruding outwardly beyond said mounting surface;

said preform having a penetrated section in which a through hole defining said bolt hole is formed;

said dowel section including a sleeve-like forming member which is fixed to said preform in coaxial

alignment with said bolt hole and which is cantilevered outwardly beyond said mounting surface; and

said dowel section having an annular portion which is formed of said matrix and which projects outwardly from said mounting surface in surrounding relationship to said forming member to define a dowel which interfits in an opposed opening formed in said cylinder block.

7. The crankshaft supporter according to Claim 6, wherein said forming member is integrally and monolithically joined to said preform and projects coaxially away from said opposing surface so as to penetrate outwardly beyond said mounting surface.

8. The crankshaft supporter as defined in Claim 6, wherein said forming member comprises a separate sleeve element which has one end fixed to said preform in coaxial alignment with the through hole, said sleeve element projecting outwardly away from said opposing surface and outwardly beyond said mounting surface.

9. The crankshaft supporter as defined in Claim 6, wherein said preform includes a center portion defining an upwardly-oriented concave bearing region, the preform also including a pair of said perforated sections positioned on opposite sides of said center section, each said perforated section having an opposing surface which is spaced downwardly from said mounting surface, the opposing surfaces on said pair of perforated sections being in substantially the same plane.